

# METAL INTERCONNECT SELF-ALIGNED SOURCE FLASH CELL

## ABSTRACT

A flash memory cell comprising a series of floating gate devices being connected to one-another through their source electrodes, which are self-aligned to their respective gate electrodes, where a local tungsten interconnect makes a substantially continuous connection to the self-aligned sources. The flash memory cell is formed by forming floating gate devices having their source electrodes connected together by a conductively doped active area, forming a nitride barrier layer overlying each transistor gate, forming a planarized insulation layer over the nitride barrier layer, removing portions of the planarized insulation layer while using the nitride barrier layer to self-align an interconnect via to the source electrodes, forming a tungsten-based interconnect into the interconnect via, the tungsten-based interconnect running a major length of the source electrodes being connected together and making contact therebetween, and forming a tungsten-based drain plug for each floating gate device.

TOP SECRET//SI//REL TO USA, UK, FVEY